



SZABO 201.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#44
7/23/04
A.W.

Applicant : Andrew Szabo
Serial No. : 09/400,649
Filed : September 21, 1999
For : NUTRITIONAL OPTIMIZATION SYSTEM AND METHOD
Examiner : Samuel Rimell
Group: 2175

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APPLICANTS' APPEAL BRIEF UNDER 37 C.F.R. §1.192

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

SIR:

In response to the Office Action dated January 6, 2004, a Notice of Appeal and Petition for Extension of Time having been filed on May 6, 2004, Applicant herewith provides its Appeal Brief.

- (1) REAL PARTY IN INTEREST: The real party in interest is the inventor, Andrew Szabo.
- (2) RELATED APPEALS AND INTERFERENCES: None.
- (3) STATUS OF CLAIMS: All claims have been finally rejected.
- (4) STATUS OF AMENDMENTS: Amendments dated May 6, 2004, canceling claim 51, will be entered on filing of appeal, per Advisory Action June 4, 2004.

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Appeal Brief

(5) SUMMARY OF INVENTION

The present invention relates to a system and method for presentation of records from an electronic database by jointly optimizing the presentation based on economic parameters and a statistical risk. The application therefore provides an automated joint or multifactorial analysis of both cost, and risk, with respect to a set of records selected from a database or class of information.

Thus, the output represent a user search is dependent on the query itself, a risk factor, such as the risk that the user is seeking something different, as well as an economic factor, such as a third party compensation or promotion fee. Because of the joint optimization, it would be difficult, for example, for a purely economic incentive to produce an irrelevant result, or one having a low probability of acceptance by the user from ranking high.

Claim 29 provides a method for presenting records to a user, comprising the steps of receiving an input from the user (page 11, line 17-23); defining a subset of records selected from an electronic database containing a set of records (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12), based on a classification of information within a respective record and the user input (page 11, line 22-page 12, line 2); determining a statistical risk associated with a respective record (page 3, lines 2-7; page 7, lines 8-10; page 16, lines 1-13; page 28, lines 3-7); determining economic parameters associated with the subset of records (page 3, lines 7 and 13, page 4, line 17-23); and presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2). Claim 42 is grouped with claim 29.

Claim 44, provides a method for presenting records to a user, comprising the steps of determining a user relevance parameter (page 3, lines 2-7, page 11, line 17-23); defining a set of records from an electronic database based on a classification of the information therewithin (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12) and the user relevance parameter (page 11, line 22-page 12, line 2); determining a statistical risk relating to the set of records and the determined user relevance parameter (page 3, lines 2-7; page 7, lines 8-10; page 16, lines 1-13; page 28, lines 3-7); determining economic parameters for defined records (page 3, lines 7 and 13, page 4, line 17-23); and presenting the set of records automatically optimized based on both the determined economic parameters and the determined

statistical risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2).

Claim 59 provides a method for outputting a set of records, comprising the steps of receiving a specification for a class of information having a plurality of records (page 11, line 17-23), said plurality of records having associated economic parameters (page 3, lines 7 and 13, page 4, line 17-23); determining a statistical risk associated with records within the class of information and the received specification (page 3, lines 2-7; page 7, lines 8-10; page 16, lines 1-13; page 28, lines 3-7); and automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2).

Claim 67 provides a method of producing a menu of selections (page 11, lines 19-23, page 23, line 22-page 23, line 8), comprising the steps of receiving an inquiry from the user; calculating a set of selections from a database responsive to the inquiry (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12), each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter (page 3, lines 7 and 13, page 4, line 17-23); and automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2) with respect to a likelihood of user adoption of a selection (page 4, line 17-page 5, line 2, page 7, lines 4-13, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 14, lines 9-12, page 16, line 22-page 17, line 7, page 19, lines 10-19, page 21, line 22-page 23, line 8, page 22 line 22-page 23, line 8).

Claims 30 and 45 define the user input as health information, which is a narrow set of information. (Page 12, line 21-page 13, line 20, line 22-page 21, line 1, page 26, line 17), page 27, lines 1-6).

Claim 31 further defines the user input as comprising a risk tolerance. (Page 21, lines 22-23, page 28, lines 3-5)

Claim 32 provides a method in which a user interface is provided to assist the user in making selections. (Page 11, lines 17-20, page 22, line 22-page 23, line 8).

Claims 33, 48 and 69 define the economic parameters as corresponding to a cost associated with a respective selected record. (Page 4, lines 17-22)

Claims 35 and 68 define the input as a semantic expression. (Page 17, lines 13-15)

Claim 36 provides the further step of determining a user preference and further optimizing the presented set of records based on the determined user preference. (Page 12, lines 13-17, page 23, lines 2-4).

Claims 37 and 52 provides the further steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records. (Page 13, line 21-page 14, line 8).

Claims 38, 53 and 61 provide the further steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user. (Page 3, lines 17-22, page 27, line 17-page 28, line 11).

Claims 39, 54 and 63 provide the further step of transacting a sale relating to a subject of at least one presented set of records with the person. (Page 10, line 22-page 11, line 7, page 19, line 20-page 20, line 9, page 29, lines 6-12, page 31, lines 5-9).

Claims 40 and 55 defines the sale of claims 39 and 54 as being conducted by an electronic data transmission between a client system and a server system. (Page 12, line 5, page 23, line 20, page 26, lines 2-13).

Claims 41 and 56 further define the electronic data transmission between the client system and the server system of claims 40 and 54 as being carried over the Internet. (Page 7, line 19, page 12, line 1, page 20, line 5, page 21, line 6, page 23, line 21, page 26, line 11).

Claims 43, 58 and 66 further comprise the steps of generating a graphic user interface and interacting with the user through the graphic user interface. (Page 11, lines 18-20, page 22, line 22-page 23, line 8).

Claim 46 defines the user relevance parameter of claim 44 as an input to a search engine. (Page 11, line 22-page 23, line 3, page 21, lines 6-8).

Claim 47 provides that the records comprise information accessible through the Internet. (Page 7, line 19, page 12, line 1, page 20, line 5, page 21, line 6, page 23, line 21, page 26, line 11).

Claim 49 further defines the method of claim 44 by requiring the presenting step to output a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk. (Page 23, line 20-page 24, page 28, lines 3-11).

Claim 50 provides that the user relevance parameter to comprises a population grouping. (Page 4, lines 1-16).

Claims 53 and 61 further comprise the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user. (Page 3, lines 17-22, page 27, line 17-page 28, line 11)

Claim 60 provides that the records to be presented in the form of a proposal, and the optimization to emphasize a likelihood of adoption of the proposal by a user. (page 4, line 17-page 5, line 2, page 7, lines 4-13, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 14, lines 9-12, page 16, line 22-page 17, line 7, page 19, lines 10-19, page 21, line 22-page 23, line 8, page 22 line 22-page 23, line 8).

Claim 62 further comprises the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance. (Page 28, lines 3-11).

Claim 64 further comprises the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network. (Page 11, lines 17-20, Page 12, line 5, line 20-page 24, line 1, page 22, line 22-page 23, line 8, page 23, line 20, page 26, lines 2-13).

Claim 70 provides that the presentation gives preference to relevant and economically feasible results. (Page 8, lines 9-23, page 16, lines 4-13).

Claim 71 provides that the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party. (Page 4, lines 17-23, page 13, lines 3-12, page 16, lines 14-21).

Claim 72 provides that the automatic optimization merges results from a set of independent modules. (Page 16, line 22-page 17, line 19).

Claim 73 provides that the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user. (Page 28, lines 3-11).

Claim 74 provides that the economic parameters correspond to an economic interest of an entity distinct from the user. (Page 4, lines 17-23, page 13, lines 3-12, page 16, lines 14-21).

Claims 42 and 57 provide a computer readable medium. (Page 12, lines 4-5, page 32, line 7)

(6) ISSUES

1. Whether claims 60 and 67-73 are properly rejected under 35 U.C.S. § 112, first paragraph, as failing to be supported by an enabling specification.
2. Whether claims 29-33, 35-50, 52-59, 61-66 and 74 are properly rejected under 35 U.C.S. § 102(e) as being anticipated by Mayaud (U.S. Patent 5,584,255).

(7) GROUPING OF CLAIMS

The rejected claims of the application do not stand or fall together. Applicants request that each claim be examined on its own merits. Applicants set forth in the argument section below, why the claims of the group are separately patentable. 37 C.F.R. § 1.192(c)(7) requires a statement as to why the claims of the group do not stand or fall together. Below is a synopsis of the differences in claim scope.

Independent claims 29, 44, 59, and 67 do not stand or fall together because they have material differences in scope.

Claim 29 is a method for presenting records to a user, comprising the steps of receiving an input from the user; defining a subset of records selected from an electronic database containing a set of records, based on a classification of information within a respective record and the user input; determining a statistical risk associated with a respective record; determining economic parameters associated with the subset of records; and presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record. Claims 32 and 42 are grouped with claim 29.

Claim 44, while also a method for presenting records to a user, comprises the steps of determining a user relevance parameter; defining a set of records from an electronic database based on a classification of the information therewithin and the user relevance parameter; determining a statistical risk relating to the set of records and the determined user relevance parameter; determining economic parameters for defined records; and presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk. This differs from claim 29, in that a user relevance parameter is determined, as compared to simply receiving an input, which is used for selecting records. A statistical risk is determined for both the set of records and the user relevance parameter. Claim 57 is grouped with claim 44.

Claim 59 provides a method for outputting a set of records, comprising the steps of receiving a specification for a class of information having a plurality of records, said plurality of records having associated economic parameters; determining a statistical risk associated with records within the class of information and the received specification; and automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk. This differs from claim 44 in that it does not employ a user relevance parameter, and differs from both claims 29 and 44 in that the records need not be in an electronic database, and that the set definition is not necessarily based on a classification of information within a record, but rather is a specification of a class of information having a plurality of records, a subtle but potentially meaningful distinction. Claim 59 differs from claim 29 in that a statistical risk is associated with both records in the class and the received specification. Claim 65 is grouped with claim 59.

Claim 67 provides a method of producing a menu of selections, comprising the steps of receiving an inquiry from the user; calculating a set of selections from a database responsive to the inquiry, each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter; and automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection. Claim 67 differs from claims 29, 44 and 59 in that claim 67 produces a menu of selections, the set of selections is not necessarily dependent on a classification of information within a record, and the presentation is “economically efficient”, based on the economic parameter and the risk with respect to a likelihood of adoption of a selection.

Thus, the independent claims represent distinct groups which must be examined and considered separately.

Claims 30 and 45 define the user input as health information, which is a narrow set of information.

Claim 31 further defines the user input as comprising a risk tolerance, which is a subjective factor.

Claims 33, 48 and 69 define the economic parameters as corresponding to a cost associated with a respective selected record, which constrains the type of information which can be considered the economic parameters.

Claims 35 and 68 define the input as a semantic expression, which distinguishes other types of inputs, such as purely quantitative data.

Claim 36 provides the further step of determining a user preference and further optimizing the presented set of records based on the determined user preference.

Claims 37 and 52 provides the further steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records. This represents a substantial addition to the base claims.

Claim 38, 53 and 61 provide the further steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user. Thus, an “optimum” is depending on a selection of conditions.

Claims 39, 54 and 63 provide the further step of transacting a sale relating to a subject of at least one presented set of records with the person. This adds a material new consideration to the claims.

Claims 40 and 55 defines the sale of claims 39 and 54 as being conducted by an electronic data transmission between a client system and a server system.

Claims 41 and 56 further define the electronic data transmission between the client system and the server system of claims 40 and 54 as being carried over the Internet.

Claims 43, 58 and 66 further comprise the steps of generating a graphic user interface and interacting with the user through the graphic user interface.

Claim 46 defines the user relevance parameter of claim 44 as an input to a search engine.

Claim 47 provides that the records comprise information accessible through the Internet.

Claim 49 further defines the method of claim 44 by requiring the presenting step to output a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk.

Claim 50 provides that the user relevance parameter to comprises a population grouping.

Claim 60 provides that the records to be presented in the form of a proposal, and the optimization to emphasize a likelihood of adoption of the proposal by a user.

Claim 62 further comprises the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance.

Claim 64 further comprises the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network.

Claim 70 provides that the presentation gives preference to relevant and economically feasible results.

Claim 71 provides that the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party.

Claim 72 provides that the automatic optimization merges results from a set of independent modules.

Claim 73 provides that the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user.

Claim 74 provides that the economic parameters correspond to an economic interest of an entity distinct from the user.

Therefore, except as expressly set forth above, each of the claims raises issues which require distinct analysis and consideration, and should be treated as separate groups.

27

(8) ARGUMENT

(i) FORMAL REJECTION

Claims 60 and 67-73 are rejected as failing to comply with the enablement requirement of 35 U.S.C. § 112, and for including alleged new matter.

Claim 60 is rejected because the original disclosure allegedly “does not state that the ‘likelihood of adoption’ is part of the optimization process, or is a variable in the optimization process.”

Applicant disagrees. The specification (Page 19, lines 10-19) clearly states:

The proposal need not be limited to nutritional supplements, and therefore changes in diet, activity or exercise may also be included in the proposals. It is noted that great changes in diet, activity and exercise are difficult to effect, and therefore such proposals may be of limited benefit. In fact, since non-compliance rates are expected to be high, an optimization based on a proposal requiring distinct efforts is likely to be rejected or ignored. On the other hand, simple changes in diet, which are likely to be adopted, may be very efficacious. Thus, on a pragmatic basis, the proposal preferably emphasizes small dietary changes and a regimen of pills and/or supplements, even where an equivalent change might be possible through dietary modification.

This passage clearly states that the optimization is sensitive to a likelihood of adoption, which is the inverse of a likelihood of rejection. In contrast to the analysis of the Examiner, the statement “Thus ... the proposal preferably emphasizes”, following a discussion of a likelihood of adoption must be interpreted as a disclosure that the proposal is formulated based on that consideration, and thus is a variable in the calculation.

In support of this interpretation, applicant quotes other portions of the specification, although the Board is encouraged to review the specification as a whole:

The present system provides an individually tailored proposal for nutritional supplementation or modification of intake. Being a proposal, and given the nature of mandates of dietary intake, the proposal may be accepted or rejected by the individual. Therefore, another embodiment of the invention involves an interactive process for arriving at a proposal, as well as a correction of optimization based on a deviation from a proposal. In this case, the cost optimization and risk analysis potentially play an important roles in a statistical analysis to arrive at a proposal. Since it would be expected that, except in the case of total parenteral nutrition, no absolute dietary schedule will be maintained, and further that it is primarily those individuals whose diets are most aberrant

initially who are recalcitrant to change, the optimization proposal must include leeway for deviations. (Page 7, lines 4-13).

Therefore, one embodiment of the invention provides an immediate feedback of a proposed nutritional supplementation based on an actual present status of a person, including recent meals and nutritional supplements, activity, health status and prospective events. This optimization may be provided through a hand held, pocket or bracelet (watch-type) device, personal computer, personal digital assistant (PDA), as a device which might be attached to or integral with a shopping cart, terminal to an on-line service, through the Internet (e.g., through a server or as a Java application), telephone with voice communication, kiosk, or centralized computer system. Therefore, a full featured system may be used to define an optimization, which may then be used to download an optimization to a portable or remote device. The programmed optimization may then be used to help keep the person "on track". and to report on an actual pattern of activity, diet and nutritional supplementation. While the portable or remote device may alter or reselect optimization continuously or often, preferably the optimization is performed infrequently, such as once per month. (Page 7, line 14-page 8, line 3)

A preferred embodiment includes an economic optimization because, without this factor playing an explicit role, the "more is better" theory may produce a proposal which is untenable. Known systems which attempt to optimize nutrition perform economic optimization in one of two ways. First, the public health model selects cost levels designed to do the most good for the most people. Some persons will receive a suboptimal dose, while others will receive little incremental benefit or even suffer toxic effects. Further, some persons will be asked to spend more than a reasonable amount, while others will have excess disposable funds without guidance as to how these funds should best be employed. Thus, the public health model does not account for an individual and his own specific factors, including budget. Second, an incomplete or limited economic analysis may be performed without the benefit of a linked health model. For example, an individual who visits a health food store and selects supplements performs a limited economic model, e.g., "that costs too much", in the selection of items for purchase. By linking the economic model with an individual health model, the benefits of a personalized proposal at acceptable cost is obtained. Further, by allowing a statistical error in the actual diet as compared to the proposed diet, the optimization may produce a better "real-world" result. (Page 8, lines 9-23).

The resulting nutritional supplements, intended to help a mammal reach the desired state, along with suggested changes in the existing diet, comprise the proposal. In appropriate circumstances, activity and exercise may also be aspects of the proposal. The individual, however, need not accept the proposal, and may thus interact with the system to modify the proposal in specific aspects. These changes act as constraints for a secondary modification of the proposal. For example, a selected health model may suggest 300 mg of ascorbic acid (vitamin C) per day, in three doses. However, the individual may prefer 750 mg per day in three doses. Thus, the proposal is then updated with 750 mg per day in three divided doses as a constraint. The entire health model must be recomputed based on this constraint. In recomputing the model, the system further

determines whether this constraint implies that a different model is more appropriate for implementation. In order to resolve this issue, the individual may be queried to determine the reason for the preference. If appropriate, hybrid models may be employed. The nutritional supplement proposal may thus include timing and frequency of dosage of the nutritional supplementation. (Page 9, lines 10-23).

In theory, an economic based model may result in a highly skewed proposal, with high doses of relatively cheap components and without any expensive components. However, often, temperance and variety are desired, and thus amounts of some nutritional supplements are limited and others added, even though these result in reduced benefits according to a strict scientific analysis. Thus, a perceived benefit of a nutritional supplement may be in excess of a rational analysis of the potential benefit based on a review of existing scientific data. Thus, a health model may include an analysis of a perceived benefit of a component, rather than necessarily a scientific analysis. Further, it is noted that, in accordance with the scientific method of analysis of nutritional supplementation, studies may fail to show a benefit, or produce contradictory findings, even for nutritional supplements of real value. For example, ginseng is believed by many to be beneficial, but many scientific studies have failed to reveal a health benefit. This does not mean, however, that the proposed benefit of a component is not real. Another limitation of scientific methods is that they emphasize dose-response relationships over balance. However, a perception of an individual may be that supplementation of smaller amounts of many different components is preferable to megadoses of a small number of nutritional supplements. Another limitation of typical scientific studies is a difficulty in proving subtle long-term effects of small doses. (Page 10, lines 1-17).

Based on an estimation of the present status of the consumer, the system then seeks to propose specific changes and nutritional supplements, in accordance with the health theory, expressed preferences, and optionally within the constraints of the economic model, to maximize the expected benefit to the consumer. The consumer then interacts with the system to "tune" the proposal based on personal preferences. After acceptance, the consumer may then execute the proposal by purchasing the recommended supplements. As stated above, the purchase system may be linked to the terminal, in communication with the terminal, or completely separate. (Page 13, lines 13-20).

At least one health model is provided which determines an optimum change in nutritional and health status 13 for the user based on acceptable changes in diet or lifestyle. Included in these changes are nutritional supplements. This model comprises a large set of formulae which represent a health status of the user, as well as models of change in health status. Each health model includes efficacy modeling for a set of nutritional supplements, as well as interaction modeling for diet, nutritional supplements, pharmaceuticals, and other factors. Thus, in this case, the health, efficacy and interaction models are unified into a single model. The user must select a health model 27 from the available choices, or may optionally hybridize existing compatible models. (Page 27, line 17-page 28, line 2).

Finally, a health optimization model 28 is selected which modifies the health model output based on the concept of risk and benefit. Thus, a user indicates explicitly a subjective risk tolerance, while implicit determinations of objective acceptable risk are also determined. This model is statistical in nature, and seeks to alter the aggressiveness of the proposal based on the models. It is noted that the aggressiveness weighting relies on the underlying health model. If a user seeks moderate aggressiveness in nutritional supplementation, but not necessarily high risk, then a different health model is preferably adopted which proposes the desired regimen. Generally, it would be strongly suggested to users to avoid high risk or very aggressive models except under professional supervision. (Page 28, lines 3-11).

The Examiner also states that “automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection” as provided by claim 67, is not supported by the specification. In fact, the specification clearly states:

The present invention provides an **optimization** of nutritional supplementation **based on models that allow prediction** of a change in health from an existing status, as a result of administration of a plurality of nutritional supplements. Relevant to various embodiments of the invention are activity of each nutritional supplement, desired change in status, toxicity and adverse effects of nutritional supplements, interactions between nutritional supplements and other factors, **cost and economics** of the nutritional supplementation, and risk, both positive and negative. (Page 3, lines 2-7).

A preferred embodiment of the invention employs an economic optimization of nutritional supplementation. Therefore, in addition to determining which nutritional supplements are appropriate, the cost of each component or the proposed nutritional supplementation as a whole is determined and **used to achieve the maximum health benefit for given economic factors, such as a budget.** Therefore, as a further aspect of this embodiment, the cost structure of combination supplements and quantity discounts are considered. In addition, third party health insurers or life insurers may provide payments, discounts or rebates for the proposed regimen. Where an economic model is not explicitly employed, a user may be presented with one or more proposals having differing nutritional supplement costs, which may then be selected by the user. (Page 4, line 17-Page 5, line 2).

The present system provides an individually tailored proposal for nutritional supplementation or modification of intake. Being a proposal, and given the nature of mandates of dietary intake, the proposal may be accepted or rejected by the individual. Therefore, another embodiment of the invention involves an interactive process for arriving at a proposal, as well as a correction of **optimization** based on a deviation from a proposal. **In this case, the cost optimization and risk analysis potentially play an important roles in a statistical analysis to arrive at a proposal.** Since it would be expected that, except in the case of total parenteral nutrition, no absolute dietary schedule

will be maintained, and further that it is primarily those individuals whose diets are most aberrant initially who are recalcitrant to change, the optimization proposal must include leeway for deviations. (Page 7, lines 4-13).

A preferred embodiment includes an economic optimization because, without this factor playing an explicit role, the “more is better” theory may produce a proposal which is untenable. Known systems which attempt to optimize nutrition perform economic optimization in one of two ways. First, the public health model selects cost levels designed to do the most good for the most people. Some persons will receive a suboptimal dose, while others will receive little incremental benefit or even suffer toxic effects. Further, some persons will be asked to spend more than a reasonable amount, while others will have excess disposable funds without guidance as to how these funds should best be employed. Thus, the public health model does not account for an individual and his own specific factors, including budget. Second, an incomplete or limited economic analysis may be performed without the benefit of a linked health model. For example, an individual who visits a health food store and selects supplements performs a limited economic model, e.g., “that costs too much”, in the selection of items for purchase. **By linking the economic model with an individual health model, the benefits of a personalized proposal at acceptable cost is obtained.** Further, by allowing a statistical error in the actual diet as compared to the proposed diet, the optimization may produce a better “real-world” result. (Page 8, lines 9-23).

The system thus seeks to determine, based on a set of personal preferences and constraints, as well as a health model and optionally a personal economic optimization model, an optimal proposal for nutritional supplementation. Public health concerns partially defer to individual health considerations. Further, absolute health mandates defer, within limits, to personal preferences and optionally cost tolerance. (Page 12, lines 13-17).

Based on an estimation of the present status of the consumer, the system then seeks to propose specific changes and nutritional supplements, **in accordance with the health theory, expressed preferences, and optionally within the constraints of the economic model, to maximize the expected benefit to the consumer.** The consumer then interacts with the system to “tune” the proposal based on personal preferences. After acceptance, the consumer may then execute the proposal by purchasing the recommended supplements. As stated above, the purchase system may be linked to the terminal, in communication with the terminal, or completely separate. (Page 13, lines 13-20).

These cited passages, among others, clearly support the idea that there is an automatic optimization, of an economically efficient presentation of selections, dependent on a joint analysis of economics and risk, with respect to a likelihood of adoption.

It is respectfully submitted that one of ordinary skill in the art would interpret the specification to clearly and unambiguously teach a system which “emphasizes a likelihood of adoption of the proposal by a user” (claim 60) or “automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection” (claim 67).

The specification includes an express discussion of the adverse results of making a proposal which is not likely to be adopted, the desirability of generating a proposal which is likely to be adopted, and providing feedback in accordance with the preferences of the user to assure that the proposal meets the user’s preferences for adoption. Therefore, the Examiner’s rejection should be reversed.

(8) ARGUMENT

(ii) ART REJECTIONS

Claims 29-33, 35-50, 52-59, 61-66 and 74 are rejected under 35 U.S.C. § 102(e) as being anticipated by Mayaud, US 5,845,255.

The independent claims require that:

Claim 29: (e) presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.

Claim 44: (d) presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk.

Claim 59: (c) automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk.

Claim 67: (c) automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection.

As a common feature, all require that the presentation of the records be optimized, based both on economic parameters and statistical risk, jointly optimized based on the economic parameters and the statistical risk, or a joint analysis of the economic parameter and risk with respect to a likelihood of user adoption.

In fact, Mayaud provides only a separate and independent output of allergy information, which is in no way jointly optimized with economic parameters, resulting from a joint analysis with an economic parameter, or provided in a presentation of records, presented in a manner based on both economic parameters and statistical risk. This allergy information, in fact, is not even integrated with the drug list, and remains a separate output.

Mayaud, in relevant part, states:

An allergies review can be conducted by checking system-stored **known allergies** of patient Mary Harrington against known pharmacokinetics and pharmacodynamics of the newly prescribed drug, entered in prescribing zone 44, for any of those allergies. **Mary Harrington's allergy information is preferably an adjunct to her patient record** and is downloaded to the

user device from the host computer facility when Mary Harrington is selected from the patient selection screen of FIG. 2. **Drug allergenic proclivities are also downloaded from one or another remote database employing the host computer facility**, under supervision of the inventive prescription management system, but preferably at a later point in the procedure, such as when a particular drug is selected for posting to prescribing zone 44. (Col. 31, lines 50-63).

Alternatively, the requisite information can be downloaded when the allergy review is conducted. Such allergy screening can alternatively be effected when a new drug is posted to Drug field 88. **Either way, a positive system finding, indicating a risk of allergic reaction to the newly selected drug can activate a visual indicator or warning**, for example, Allergies button 52 may blink and, if desired, an audible warning may sound alerting the physician to reconsider their selection. Alternatively, or additionally, an alert screen can tell the physician of an allergy if an attempt is made to prescribe an offending drug. Such alerts can be used to notify the physician of drug interactions, can provide adverse treatment warnings or can alert them to non-compliance with formulary recommendations, for example to the use of an unnecessarily expensive drug, and may be accompanied by suggestions for more appropriate alternative therapies. (Col. 31, line 64-Col. 32, line 13).

Equivalent procedures can alert to possible drug interactions and contraindications, referring to the patient's prescription history for possible active or recently expired prescriptions that may interact with a newly prescribed drug, and for other patient data relevant to the drug's behavior in that patient. Alternatively, the such a review for possible undesired aspects of the drug's performance on the patient is made upon activating Send Rx button 80. (Col. 32, lines 14-21).

FIG. 19 is a flowchart shows the sequence following the entry of the patient's condition through the Condition field 64. The user then begins the process of deciding which drug to prescribe. The user may wish to access information possible formulary drugs by accessing Rx Info 60. If the user wishes to expand his scope of options, he may access a non-formulary list through Rx Other 122. **The user may then access the patient's allergy history through the Allergy button 52**. However, the user may choose to bypass either the formulary and non-formulary list and simply check for allergies. As all the option involve access through the System Scripts window 18, the user is not locked into a particular sequence of actions. However, regardless of the user's sequence of actions, the system itself always goes through a sequence to insure that the user will be aware of allergies and other pertinent information from the remote database 210 before a final prescription is generated. This concept is further expanded in FIG. 20 where there is a safeguard within the prescription database (Rx Info) shown to prevent the reprinting of expired prescription. (Col. 38, line 65-Col. 39, line 17).

According to Mayaud, a drug for which an allergy alert is triggered remains listed, and apparently the presentation is unaltered, except for that separate alert. Likewise, an “unnecessarily expensive drug” is also denominated by a simple warning. Clearly this separate consideration of cost and risk does not anticipate a joint or co-optimization thereof (as required by, e.g., step (e) of claim 29, step (d) of claim 44, step (c) of claim 59, and step (c) of claim 67),

and leads to a materially different result. That is, Mayaud does not alter the presentation (e.g., selection or ranking) of responses due to any statistical risk, while a joint optimization would, for example, require some consideration of the interrelation of both factors in producing a result.

The final element of claim 29 requires: “presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.” There is simply no teaching or suggestion in Mayaud to conclude that the presentation of records is jointly optimized based on both economics and statistical risks. In the cited passage, the risk of allergic reaction (or other enumerated “risks”) are provided as an alert separate and apart from the presentation of records. That is, even if a drug is contraindicated, and therefore non-optimal, it is still presented. Therefore, it is quite clear that there is simply no joint optimization disclosed in the reference, as required by claim 29.

Likewise, claim 44 requires: “presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk,” and claim 59 requires: “automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk.” Mayaud does not teach or suggest any automatic optimization based on both economic factors and determined statistical risk, and indeed, it is not clear that Mayaud in any way determines any statistical risk.

Claim 67 requires: “automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection.” This claim therefore involves a further aspect to the optimization, that the optimization be with respect to a likelihood of user adoption, a factor not taught or suggested by the reference.

While Mayaud teaches consideration of drug cost, and a manually created formulary list, this appears to be independent of other analyses; that is, a set of drugs may be cost-ranked, but not automatically ranked according to a cost-risk or other hybrid analysis. Therefore, the optimization is not “joint”.

The Examiner has also rejected the various dependent claims. Initially, it is noted that due to the distinctions addressed above with respect to the base claims, the dependent claims should be deemed allowable.

Further, applicant notes that, beyond the deficiencies with respect to the independent claims, the Examiner has failed to establish a prima facie case for anticipation with respect to claims 36-38, 49, 52-53, and 61-62, and has misapplied the reference.

Claim 36 requires that the optimized output be dependent on the user preference. This distinguishes the situation where the "user preference" is an input which selects a different set of records, and thus does not alter an optimization of the same set of records. Likewise, in contrast to claims 37 and 52, the reference does not re-optimize based on a user feedback input.

The passage in Mayaud, on Col. 39, lines 44-54, does not provide for any joint optimization, or possibly any optimization at all, and therefore fails to meet the present claim language, as required by claims 38, 53 and 61.

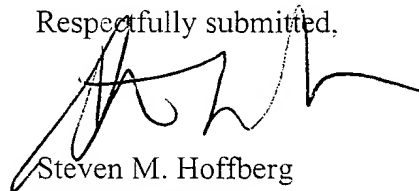
Mayaud provides no teaching or suggestion of outputting a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk, as required by claim 49.

Mayaud provides no relevant teaching with respect to providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance, as required by claim 62.

CONCLUSION

It is therefore believed that the rejections of the Examiner should be reversed.

Respectfully submitted,



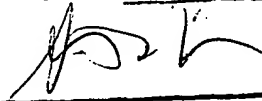
Steven M. Hoffberg
Reg. No. 33,511

MILDE & HOFFBERG LLP
10 Bank Street – Suite 460
White Plains, NY 10606
(914) 949-3100

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CLAIM APPENDIX

29. A method for presenting records to a user, comprising the steps of:
- (a) receiving an input from the user;
 - (b) defining a subset of records selected from an electronic database containing a set of records, based on a classification of information within a respective record and the user input;
 - (c) determining a statistical risk associated with a respective record;
 - (d) determining economic parameters associated with the subset of records; and
 - (e) presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.
30. The method according to claim 29, wherein the user input comprises health information.
31. The method according to claim 29, wherein the user input comprises a risk tolerance.
32. The method according to claim 29, wherein a user interface is provided to assist the user in making selections.
33. The method according to claim 32, wherein the economic parameters correspond to a cost associated with a respective selected record.
35. The method according to claim 29, wherein the input comprises a semantic expression.
36. The method according to claim 29, further comprising the steps of determining a user preference and further optimizing the presented set of records based on the determined user preference.

37. The method according to claim 29, further comprising the steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records.

38. The method according to claim 29, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

39. The method according to claim 29, further comprising the step of transacting a sale relating to a subject of at least one presented set of records with the person.

40. The method according to claim 39, wherein said sale comprises an electronic data transmission between a client system and a server system.

41. The method according to claim 40, wherein the electronic data transmission between the client system and the server system is carried over the Internet.

42. A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 29.

43. The medium according to claim 42, further comprising the steps of generating a graphic user interface and interacting with the user through the graphic user interface.

44. A method for presenting records to a user, comprising the steps of:

(a) determining a user relevance parameter;

(b) defining a set of records from an electronic database based on a classification of the information therewithin and the user relevance parameter;

(c) determining a statistical risk relating to the set of records and the determined user relevance parameter;

(d) determining economic parameters for defined records; and

(d) presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk.

45. The method according to claim 44, wherein the user relevance parameter comprises health information.

46. The method according to claim 44, wherein the user relevance parameter comprises an input to a search engine.

47. The method according to claim 44, wherein the records comprise information accessible through the Internet.

48. The method according to claim 47, wherein the economic parameters correspond to a cost associated with a respective record.

49. The method according to claim 44, wherein said presenting step comprises outputting a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk.

50. The method according to claim 44, wherein the user relevance parameter comprises a population grouping.

52. The method according to claim 44, further comprising the steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records.

53. The method according to claim 44, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

54. The method according to claim 44, further comprising the step of transacting a sale of at least one presented set of records with the user.

55. The method according to claim 54, wherein said sale comprises an electronic data transmission between a client system and a server system.

56. The method according to claim 55, wherein the electronic data transmission between the client system and the server system is carried over the Internet.

57. A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 44.

58. The medium according to claim 57, further comprising the steps of generating a graphic user interface and interacting with the user through the graphic user interface.

59. A method for outputting a set of records, comprising the steps of:

- (a) receiving a specification for a class of information having a plurality of records, said plurality of records having associated economic parameters;
- (b) determining a statistical risk associated with records within the class of information and the received specification; and
- (c) automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk.

60. The method according to claim 59, wherein the presentation of the records is in the form of a proposal, and the optimization emphasizes a likelihood of adoption of the proposal by a user.

61. The method according to claim 59, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

62. The method according to claim 59, further comprising the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance.

63. The method according to claim 59, further comprising the step of transacting a sale of at least one record with the user.

64. The method according to claim 59, further comprising the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network.

65. A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 59.

66. The medium according to claim 65, further comprising the steps of generating a graphic user interface and interacting with the person through the graphic user interface.

67. A method of producing a menu of selections, comprising the steps of:

- (a) receiving an inquiry from the user;
- (b) calculating a set of selections from a database responsive to the inquiry, each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter; and
- (c) automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection.

68. The method according to claim 67, wherein the inquiry comprises a semantic expression.

69. The method according to claim 67, wherein the economic parameter comprises a cost.

70. The method according to claim 67, wherein the presentation gives preference to relevant and economically feasible results.

71. The method according to claim 67, wherein the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party.

72. The method according to claim 67, wherein the automatic optimization merges results from a set of independent modules.

73. The method according to claim 67, wherein the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user.

74. The method according to claim 32, wherein the economic parameters correspond to an economic interest of an entity distinct from the user.